

COUNTRY ANALYSIS BRIEFS

Yemen

Last Updated: March 2010

Background

Yemen is a minor oil and gas producer but its location is strategic for world oil shipping.

Yemen's location on the Bab al Mandab, one of the world's most strategic shipping lanes through which an estimated 3.7 million barrels of oil pass daily, makes Yemen important to the global oil trade. Disruption to shipping in the Bab el-Mandab could prevent tankers in the Persian Gulf and the Gulf of Aden from reaching the Suez Canal/Sumed pipeline complex, requiring a costly diversion around the southern tip of Africa to reach western markets.



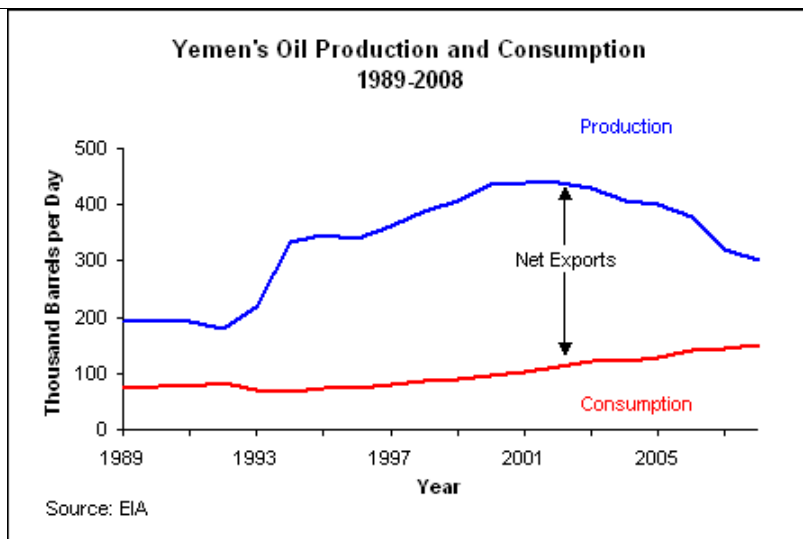
Yemen's economy is heavily dependent on hydrocarbons, which account for 25 percent of GDP, over 70 percent of government revenues, and over 90 percent of foreign exchange earnings. Yemen is actively seeking to increase foreign investment in its energy sector, but concerns about piracy in the Gulf of Aden, which it shares with Somalia, may be limiting prospects for increased foreign investment in Yemen's oil and gas sectors. Declining oil revenues are weakening the government's ability to provide basic services.

Oil

Overview

Yemen seeks to attract more foreign investment to reverse its declining crude oil production.

According to *Oil and Gas Journal*, Yemen had proven crude oil reserves of 3 billion barrels as of January 1, 2010. Yemen's oil reserves and production are located in 5 main areas: Jannah and Iyad in central Yemen, Ma'rib-Jawf in the north, and Shabwa and Masila in the south. Recent exploration activity has focused on the area bordering Saudi Arabia, but additions from exploration in the past few years have been relatively small. Despite interest from a large number of companies during an initial licensing round in late 2007, exploration of Yemen's offshore areas has been harmed by the escalation of Somali piracy in the Gulf of Aden in 2008 and 2009; according to the *Yemen Times*, the fourth bidding round for 11 offshore oil blocks was postponed in August 2009 in part due to international concerns regarding security in the Gulf of Aden and higher insurance rates.



Sector Organization

Yemen's national oil company, General Corporation for Oil & Gas/Mineral Resources, is an affiliation of several state-owned subsidiaries including: the Yemen Petroleum Company; the Yemen Refining Company; Petroleum Exploration and Production Authority; Yemen Gas Company, and the General Department of Crude Oil Marketing. The company is responsible for managing industry contracts and relations with operators and partners, as well as the government's share of crude exports. All branches report to the Ministry of Oil and Mineral Resources, which is responsible for oil policy but contracts with foreign oil companies still require parliamentary approval. The oil sector is open to private company investment on a production-sharing basis.

Production

In 2008, Yemen's total oil production was about 300,000 barrels per day (bbl/d). Production has been declining steadily since reaching a peak of 440,000 bbl/d in 2001, and was estimated to fall to around 290,000 bbl/d in 2009 by Yemen's Ministry of Oil and Minerals. EIA expects oil output to decrease further to 260,000 bbl/d in 2010.

Oil production in Yemen is dominated by a number of international oil companies. All production currently comes from 2 main sedimentary basins, Marib/ Shabwah and Say'un/Masila, out of a total of 12 basins believed to hold oil reserves. Al Masila's Block 19 is ranked as the country's highest producer at approximately 95,000 bbl/d, or 32 percent of the total, according to Yemen's Ministry of Oil and Minerals. There are 12 producing blocks operated by 11 oil companies and there are 31 blocks under exploration by 16 oil companies. In September 2009, SABA, Yemen's official news agency, reported that Yemen's authorities for oil exploration and production plan to explore for oil at 42 locations between 2010 and 2015.

Consumption and Exports

Domestic consumption accounted for approximately 150,000 bbl/d in 2008. According to Yemen's news agency, the government's share of oil exports in 2009 was 56.8 million bbl/d, which brought in revenues of US\$3.5 billion; its share of oil exports in 2008 was 69.4 million bbl/d, with revenues of US\$5.9 billion. Exports and revenues were lower in 2009 due to lower production, lower government share of production, and lower prices. China and India are the main export markets for Yemeni crude. In 2008, Asian countries accounted for 76 percent of Yemen's exports and Arab countries for almost 15 percent.

Export Pipelines and Terminals

Yemen has an integrated network of pipelines that transport crude oil and natural gas from 3 central production units to export terminals. These include the 270-mile Marib-Ras Isa pipeline, which transports oil from the Marib basin to the Ras Isa offshore export terminal on the Red Sea and has a capacity of 300,000 bbl/d. The 90-mile Masila-Ash Shahir pipeline runs from Masila to the export terminal at Ash Shahir on the Gulf of Aden and has a capacity of 300,000 bbl/d. The 130-mile Shabwa-Bir Ali pipeline runs from the Ayad-Shabwa block to the Bir Ali terminal on the Gulf of Aden and has a capacity of 135,000 bbl/d. The total length of pipelines in the country is estimated at 662 miles.

A proposed 37-mile oil pipeline from the Haban oil field to export facilities on the Gulf of Aden was up for bids in January 2010. Haban oil production is expected to increase from 11,000 bbl/d to 32,000 bbl/d by the end of 2010.

Downstream

According to the January 2010 *Oil and Gas Journal*, Yemen has a total crude oil refining capacity

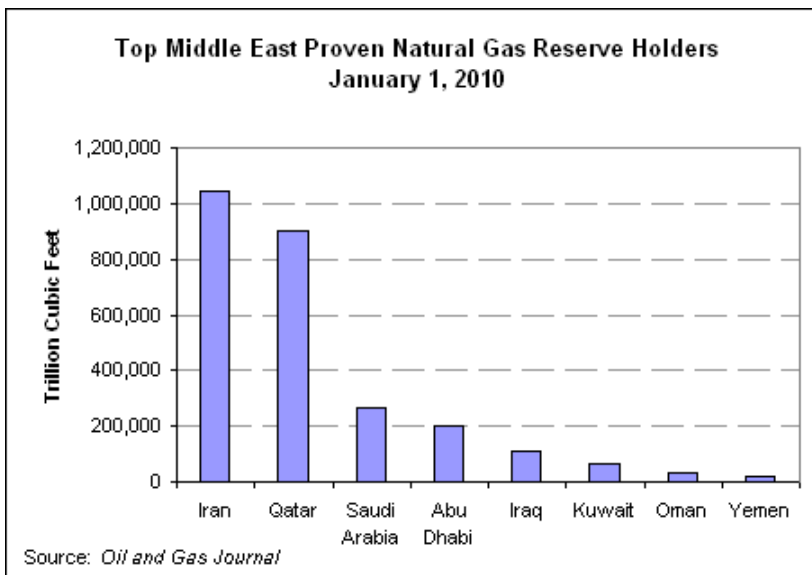
of 140,000 bbl/d from two refineries. The 130,000 bbl/d Aden refinery is operated by Aden Refinery Company (ARC) and the 10,000 bbl/d Marib refinery is operated by Yemen Hunt Oil Company. Yemen is reportedly in talks with China's Sinopec, among other companies, to upgrade the Aden refinery. In November 2009, it was reported that a contract was signed with South Korean company Shinhan for the modernization of the Marib refinery to increase its capacity from 10,000 to 25,000 bbl/d.

Natural Gas

Overview

According to the *Oil and Gas Journal*, as of January 1, 2010, Yemen has 16.9 trillion cubic feet (Tcf) of proven natural gas reserves. Most of Yemen's natural gas reserves are concentrated in the Marib-Jawf fields, with 10 Tcf of proved reserves according to Yemen LNG. Success in developing the liquefied natural gas (LNG) sector is likely to increase opportunities for further natural gas exploration and production. LNG exports are projected to offset Yemen's falling oil export revenues in 2011, when Yemen's LNG project reaches full capacity.

Yemen began exporting LNG in November 2009. Exploitation of its large gas reserves will provide the Yemeni government with a crucial revenue stream.



Production

According to Global Insight, Yemen produced an estimated 365 billion cubic feet (Bcf) in 2009 and domestically consumed 36.5 Bcf. Prior to 2009, Yemen produced only associated natural gas, practically all of which was reinjected to provide enhanced oil recovery. A long-term LNG sales contract with Korea Gas Corp., signed in 2005, provided both the impetus and the investment needed to begin developing Yemen's natural gas reserves for the export market. Yemen also signed contracts with Swiss GDF Suez Company and lead developer, Total, whose LNG shares are slated to be shipped to the United States. All three contracts run for twenty years.

The Yemen News Agency (SABA) in December 2009 reported that the government was engaged in negotiating changes to approved production sharing agreements with oil companies operating in the country aimed at encouraging natural gas exploration, production, and development. Agreements contain, for the first time, the principle of gas production and use sharing.

Liquefied Natural Gas

According to Cedigaz, Yemen exported 18.9 million cubic feet (MMcf) of LNG in 2009. Yemen's first LNG plant went online in October 2009, at the port of Balhaf on the Gulf of Aden. The first cargo of 5.1 MMcf (147,000 cubic meters), was shipped to South Korea at the beginning of November 2009, almost a year behind schedule. Several more LNG shipments were made in December 2009, to Spain, Mexico, and South Korea. Other LNG deliveries have since been made to China, Texas, and most recently, Boston. An estimated 5 MMcf of LNG arrived at GDF Suez' Everett terminal in Boston on February 23, 2010.

Yemen LNG has 4 tankers with a total capacity of 13 MMcf. A second liquefaction unit, currently under construction, is expected to become operational towards the end of 2010, according to Yemen LNG. Yemen will be able to export 6.7 million metric tons of LNG when the project reaches full capacity in 2011.

The Balhaf terminal receives natural gas from Block 18 in the Marib Basin via a 200-mile, 900,000 cubic feet per day capacity pipeline. Block 18 is operated by the Yemeni government. About 9.2 Tcf of gas reserves have been earmarked to feed the LNG liquefaction plant. SABA recently reported that Yemen has the ability to export over 200 MMcf of LNG per year.

Yemen LNG is the company behind the export program. Its principal operator is the French oil and gas giant Total, which holds 39 percent interest in the project, followed by the independent American oil company Hunt Oil, which holds 17 percent. Three South Korean companies and local Yemeni investors make up the remainder of the backers.

Much investment in coming years is expected to be ploughed into the country's natural gas infrastructure. As reported by SABA, one the largest construction projects in the country's history was announced in November 2009. The Yemen Gas City Company is planning a US\$20 billion industrial city in Hodiedah. Powered by gas, the industrial complex will house petrochemical and heavy manufacturing plants, as well as cement plants and power stations. A memorandum of understanding for the project has been signed by the UAE's Dana Gas and Crescent Petroleum.

Profile

Energy Overview

Proven Oil Reserves (Oil & Gas Journal, January 1, 2010)	3 billion barrels
Oil Production (2008)	300 thousand barrels per day
Oil Consumption (2008)	152 thousand barrels per day
Proven Natural Gas Reserves (Oil & Gas Journal, January 1, 2010)	16.9 trillion cubic feet
Natural Gas Production (2009E)	365 billion cubic feet
Natural Gas Consumption (2009E)	36.5 billion cubic feet
Total Energy Consumption (2007)	0.288 quadrillion Btus*, of which oil accounts for 100%.
Total Per Capita Energy Consumption (2007)	13.35 million Btus
Energy Intensity (2007)	5,811 Btu per US\$2005-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2008)	20.6 million metric tons of carbon, of which oil accounts for 100%.
Per-Capita, Energy-Related Carbon Dioxide Emissions (2008)	0.93 metric tons
Carbon Dioxide Intensity (2008)	0.40 Metric tons per thousand US\$2005-PPP**

Oil and Gas Industry

Organization	Yemen's national oil and gas company, General Corporation for Oil & Gas/Mineral Resources, is a loose affiliation of a number of state-owned subsidiaries, including: Yemen Petroleum Company (YPC) manages a nominal government interest in production (PSAs) and handles marketing; General Corporation for Oil and Mineral Resources (GCOMR) is an investment and holding company; Yemen Refining Company (YRC) manages refining industry; General Department of Crude Oil Marketing (GDCOM) handles government shares of exports; The Petroleum Exploration and Production Authority (PEPA) negotiates contracts.
Major Oil Producing Blocks	Marib, Masila, Jannah, East Sarr, East Shabwa, Hwarim, Damis, East Al Hajar, South Hwarim, Malik, West Ayad, Al-Uqlah
International Oil Company Involvement	Calvalley, CCC, Dove Energy, DNO, Eni, Epsilon, Gallo, Hoodoil, Hunt, Korea National Oil Company, Kuwait Energy, Midas, MOL, Nexen, Occidental, Oil Search, OMV, Reliance, Safer, Sinopec, Total

Natural Gas Reserves	Marib, Jannah, East Shabwa, Ayad
Major Pipelines	Marib-Ras Isa Pipeline, Masila-Ash Shahir Pipeline, Shabwa-Bir Ali Pipeline
Major Refineries (capacity, bbl/d)	Aden (130,000), Marib (10,000)
Major Oil/LNG Terminals	Aden, Hodeidah, Bir Ali, Ash Shahir/Al Mukalla, Ras Isa, Balhaf

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power.

**GDP figures from Global Insight estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

[EIA – Yemen Country Energy Profile](#)

U.S. Government

[CIA World Factbook - Yemen](#)

[U.S. State Department Background Notes on Yemen](#)

General Information

[AME Info Middle East Business Information](#)

[Oil and Gas Directory Middle East](#)

[Yemen Gateway](#)

[The Yemen Times](#)

[The World Bank](#)

[Oil and Gas Directory Middle East](#)

Government Agencies

[Central Bank of Yemen](#)

[Yemen Ministry of Oil and Minerals](#)

[Petroleum Exploration and Production Authority of Yemen \(PEPA\)](#)

[Yemen News Agency \(SABA\)](#)

Oil and Natural Gas

[Safer Exploration and Production Operations Company \(SEP\)](#)

[Yemen LNG](#)

[Nexen Inc.](#)

[Total](#)

Sources

Agence France Presse

Business Monitor International

CEDIGAZ

CIA World Factbook

Facts Global Energy

Gas Daily

Gazprom

Global Insight

International Oil Daily

MEES

Oil & Gas Journal

Oil & Gas News

Petroleum Economist

Petroleum Intelligence Weekly

Platt's Oilgram News

Tenders Info

Total

UPI Energy

U.S. Energy Information Administration

World Gas Intelligence

Yemen Ministry of Oil and Minerals

Yemen News Agency

Yemen Times

Yemen Petroleum Exploration and Production Authority (PEPA)

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